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BEFORE THE ARIZONA CORPORATION COMMISSION

MIKE GLEASON  
Chairman  
WILLIAM A. MUNDELL  
Commissioner  
JEFF HATCH-MILLER  
Commissioner  
KRISTIN K. MAYES  
Commissioner  
GARY PIERCE  
Commissioner

Arizona Corporation Commission

DOCKETED

OCT 23 2008

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IN THE MATTER OF THE APPLICATION  
OF UNS ELECTRIC, INC. FOR APPROVAL  
OF ITS DEMAND-SIDE MANAGEMENT  
COMPACT FLUORESCENT LAMP BUY-  
DOWN PROGRAM

DOCKET NO. E-04204A-08-0341

DECISION NO. 70556

ORDER

Open Meeting  
October 15 and 16, 2008  
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. UNS Electric, Inc. ("UNSE" or "Company") is certificated to provide electric service as a public service corporation in the State of Arizona.

2. On July 3, 2008, UNSE filed an application for approval of its proposed Demand-Side Management ("DSM") Compact Fluorescent Lamp ("CFL") Buy-Down Program ("Program").

Program Summary

3. UNSE's CFL Buy-down Program would promote high-efficiency lighting. The Company, along with an outside Implementation Contractor ("IC") would negotiate discount pricing from CFL manufacturers and retailers (up-stream buy-down) through incentives paid to the manufacturer. Customers would be referred to participating retailers to purchase qualifying products. Qualifying CFL products would carry the Energy Star® label. Discount pricing would be passed on to consumers through a negotiated agreement with lighting manufacturers and

1 retailers. The Program would also provide consumer education, and sales training for participating  
2 retailers, including in-store point-of-sale displays. The Program would be administered by the IC.

3 4. Although the Program would be available to all UNSE customers, the target market  
4 would be UNSE's residential and small commercial customers. Compact fluorescent lamps are  
5 substantially more expensive than traditional incandescent lamps, which is a barrier to their  
6 widespread use. By providing this discount program, UNSE could expect greater use of CFLs,  
7 and, along with its customers, would see savings from reduced power and energy use.

8 Program Implementation

9 5. To execute the Program, UNSE would work with key partners including:

- 10       ▪ The Implementation Contractor;  
11       ▪ Lighting manufacturers;  
12       ▪ Lighting retailers; and  
13       ▪ Local organizations that can help promote the Program.

14 6. UNSE would solicit participation of lighting manufacturers in the Program through  
15 a Request for Proposal process. The Program would be implemented by the third party IC whose  
16 responsibilities would include include:

- 17       ▪ Soliciting of discount pricing from manufacturers in conjunction with UNSE;  
18       ▪ Identifying and coordinating with selected retail outlets;  
19       ▪ Training retail outlet sales and management staff; and  
20       ▪ Tracking Program progress and reporting to UNSE.

21 7. UNSE itself would provide overall Program management, quality control, and  
22 evaluation, and would also provide Program marketing and customer awareness through strategies  
23 such as:

- 24       ▪ Promotions on the UNSE website concerning the benefits of energy-efficient  
25       lighting products and announcement of special pricing and promotional events;  
26       ▪ Advertising in major newspapers and other selected print media in the UNSE  
27       service region to raise awareness of the availability of the Program and attract  
28       customers to participating retail outlets;  
29       ▪ Working with the IC to develop and coordinate point-of-sale advertising at  
30       participating retail outlets; and  
31       ▪ General ongoing promotion of the Energy Star® label and the value of Energy  
32       Star® lighting and appliances.

1           8.     The Implementation Contractor would provide general program marketing in  
2 conjunction with UNSE marketing efforts including:

- 3               ▪ Development of point-of-sale marketing displays with participating retailers to  
4 promote the benefits of qualifying products and announce special pricing and  
5 promotional events;
- 6               ▪ Scheduling and coordination of special pricing and promotional events with  
7 participating retailers;
- 8               ▪ Assistance with responding to customer inquiries about the Program and where  
9 to purchase qualifying products;
- 10              ▪ Training participating retailers on communicating the availability and benefits of  
11 qualifying products to their customers; and
- 12              ▪ Providing information concerning proper disposal of CFLs, such as the  
13 following:
  - 14                  - UNSE would provide proper disposal information in accordance with proper  
15 practice and Arizona law.
  - 16                  - Recycling would be encouraged, and a list of recycling centers in the UNSE  
17 service area provided.
  - 18                  - Information would be provided on the proper sealing and disposal of used  
19 CFLs in domestic trash
- 20              ▪ The Program advertising campaign would communicate that energy-efficient  
21 lighting products help reduce customer energy bills, provide equal or better  
22 lighting quality, last up to 10 times longer, and the reduced energy use is  
23 beneficial for the environment.

24           9.     UNSE projects that more than 80,000 discounted CFLs would be sold during the  
25 first year of the Program. See Table 2.

26 Budget and Energy Savings

27           10.    UNSE proposes a first-year budget for the Program of \$225,000. The major portion  
28 of the budget is the incentive payments themselves, making up 55.4 percent of the total. UNSE  
expects to expand the Program by 3 percent per year.

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Table 1  
Compact Fluorescent Lamp Buy-down Program  
Year 2008 Budget

UNSE BUDGETED EXPENSES			Amount	Pct of Total
Administrative				
	Labor		\$3,085	1.37%
	Travel Expense		\$247	0.11%
	Overhead		\$7,864	3.50%
	Total UNSE Administrative		\$11,195	4.98%
Marketing			\$19,125	8.5%
Implementation				
	Direct Activity		\$0	0.00%
	Materials & Hardware		\$1,086	0.48%
	Rebate Processing		\$6,710	2.98%
	Total Implementation		\$7,796	3.46%
Measurement and Verification			\$4,463	1.98%
	TOTAL UNSE EXPENSES		\$42,579	18.92%
CONTRACTOR BUDGETED EXPENSES				
Implementation				
	Labor		\$2,524	1.12%
	Travel Expense		\$47	0.02%
	Overhead		\$4,234	1.88%
	Marketing		\$19,125	8.50%
	Materials & Hardware		\$511	0.23%
	Rebate Processing		\$26,838	11.93%
	Total Implementation		\$53,249	23.68%
Measurement and Verification			\$4,537	2.02%
	TOTAL SUBCONTRACTED EXPENSES		\$57,816	25.70%
INCENTIVES				
	Paid to CFL Manufacturers		\$124,605	55.38%
	TOTAL BUDGET		\$225,000	

11. Analyses show that the Program would provide demand savings of 0.0042 kW and energy savings of 32 kWh annually (including line losses), on average, per lamp. Table 2 shows UNSE's projected sales of new CFLs under the Program, along with the total annual demand and energy savings resulting from the use of additional CFLs.

**Table 2**  
**CFL Buy-down Program**  
**Projected CFL Sales, Demand and Energy Reductions**

Year	2008	2009	2010	2011	2012
Projected CFL Sales	80,390	82,802	85,286	87,845	90,480
Coincident Demand	302	311	320	330	340
Energy Use Reduction (kWh)	2,578,235	2,655,582	2,735,249	2,817,307	2,901,826

12. Demand and energy savings from replacement of an incandescent lamp with a CFL are shown in Table 3. The analysis assumes using the typical CFL replacement needed to provide the same level of lighting for a given incandescent lamp. The reduction in energy use shown is UNSE's estimated annual kWh saved due to the replacement of an incandescent lamp with a CFL assuming typical hours use.

**Table 3**  
**Demand and Energy Savings from CFL replacement**

Watts per Lamp		Annual kWh
<u>Incandescent</u>	<u>CFL</u>	<u>Reduction</u>
40W	16W	21 kWh
60W	22W	33 kWh
75W	27W	40 kWh
100W	43W	49 kWh

#### Benefit/Cost Analysis

13. The Commission's 1991 Resource Planning Decision established the Societal Test as the methodology to be used for determining the cost-effectiveness of a DSM program. Under the Societal Test, in order to be cost-effective, the ratio of benefits to costs must be greater than one. That is, the incremental benefits to society of a program must exceed the incremental costs of having the program in place. Societal costs for a DSM Program include the cost of the measure and the cost of implementing the program, excluding rebates. The societal benefits of the program include deferred or avoided generation capacity and energy costs. Other benefits of a program may include reduced water consumption and emissions, although they may not be monetized.

14. Staff's benefit/cost analysis has concluded that the Program is cost-effective and would result in approximately \$1.2 million in net benefits to society over the life of the CFLs installed under the Program, with a benefit/cost ratio of 1.5.

15. UNSE has projected environmental benefits as shown in Table 4.

**Table 4**  
**Projected Environmental Benefits**

	<b>2008-2012</b>	<b>Lifetime</b>
<b>CO<sub>2</sub> (lbs)</b>	22,257,009	162,476,169
<b>SO<sub>x</sub> (lbs)</b>	10,677	77,941
<b>NO<sub>x</sub> (lbs)</b>	34,494	251,808

**Reporting Requirements**

16. Staff has recommended that if the Program is approved, it should be included in UNSE's semi-annual DSM report filed with the Commission. Staff has recommended that, at a minimum, reporting for the Program should include:

- a. Number and wattage of CFLs sold;
- b. Average cost of CFLs from manufacturer;
- c. Average price of CFLs paid by the customer;
- d. An attestation from a Company officer that labor and other expenses charged to the Program are incremental costs that are not being recovered in base rates.
- e. A complete energy analysis for the Program including calculations of demand and energy reductions due to new CFLs;
- f. Estimated cost savings to participants;
- g. Descriptions of program marketing;
- h. Copies of new or revised marketing materials;
- i. Copies of and descriptions of agreements with CFL manufacturers and retailers;
- j. The total amount of the Program budget spent during the previous six months, the previous 12 months, and since the inception of the program;
- k. Any significant impacts on program cost effectiveness;
- l. Environmental savings; and
- m. Descriptions of any problems with proposed solutions including movements of funding from one program to another.

1 CFL Disposal

2 17. CFLs contain a very small amount of mercury sealed within the glass tubing – an  
3 average of 4 milligrams (“mg”) – about the amount that would cover the tip of a ballpoint pen. By  
4 comparison, older fever thermometers contain about 500 mg. Most makers of CFLs have reduced  
5 the mercury in their products. Some manufacturers have dropped mercury content to 2.5 mg or less  
6 per light bulb. According to Consumer’s Union, in the near future there will be strict mercury  
7 limits for CFLs to receive the Energy Star® label.

8 18. No mercury is released when the bulbs are in use or in storage. Nonetheless,  
9 breakage can present a hazard, and CFLs should be recycled to reduce the presence of mercury in  
10 the environment.

11 19. The EPA estimates there are 104 metric tons (104,000 kilograms) of mercury  
12 emissions released each year in the United States. Most of these emissions come from coal-fired  
13 power plants. Mercury released into the air is the main way that mercury gets into water and then  
14 fish. (Eating fish contaminated with mercury is the most common way for humans to be exposed.)

15 20. EPA estimates that almost ninety percent of the mercury vapor inside fluorescent  
16 light bulbs adheres to the inside of the light bulb as it is used, and that the rest of the mercury is  
17 released into air or water when it is sent to a landfill, assuming the light bulb is broken. Therefore,  
18 as a worst case, if all 290 million CFLs sold in 2007 were sent to a landfill rather than recycled,  
19 they would add 0.13 metric tons, or 0.1 percent, to U.S. mercury emissions.

20 21. Although a CFL contains mercury, its use can reduce the amount of mercury  
21 released into the environment. This is because CFLs use less electricity than incandescent lamps,  
22 and therefore there are less power plant emissions. The EPA states that a 13-watt, 8,000-hour-life  
23 CFL, compared to a 60-watt incandescent lamp, will save 376 kWh over its lifetime. This avoids  
24 4.5 mg of mercury from power plant emissions. Compared to the average 4 mg of mercury in a  
25 CFL, even if the lamp goes to a landfill, overall mercury released into the environment would be  
26 reduced. EPA recommends that CFLs be recycled where possible, to maximize mercury savings.

27 ...

28 ...

22. CFLs also help to reduce other pollutants associated with electricity production, and landfill waste (because the bulbs last longer). So despite the mercury contamination, they are more beneficial environmentally when compared to traditional incandescent light bulbs.

23. Although CFLs contain only a small amount of mercury in each lamp, breakage can present a personal hazard, and CFLs should be disposed of carefully. Broken or unbroken used CFLs should be taken to a local recycling center. Home Depot Inc. has begun a national recycling program at all of its stores. Customers can take used CFLs to any Home Depot store for recycling.

24. If CFLs must be disposed of in domestic trash, cleanup and disposal should be in accordance with EPA recommendations found at <http://www.epa.gov/mercury/spills/index.htm> or at the Energy Star® site:

[http://www.energystar.gov/ia/partners/promotions/change\\_light/downloads/Fact\\_Sheet\\_Mercury.pdf](http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf)

#### Response to Public Comment and Proposed Alternative

25. In his comments and proposed alternative, filed in this docket on July 28, 2008, Marshall Magruder criticized UNSE's proposed Compact Fluorescent Lamp Buy-down Program as not in the public interest, meaningless, and amounting to corporate welfare. Mr. Magruder proposes an alternative program which he claims would be more cost effective; that is, providing customers with rebate coupons.

26. Staff questions the efficiency of a coupon program, and is concerned with the added customer effort of applying for a rebate check for each CFL purchase as opposed to directly discounting the lamps at the point of sale.

27. Very early in the planning process for the CFL Buy-down program, UNSE considered a coupon/rebate program similar to Mr. Magruder's proposal. However, after discussing options with other utilities and implementation contractors, and after viewing the overwhelming success of the APS program, the Company decided on the manufacturer buy-down program model.

28. With the buy-down program, UNSE can negotiate lower prices for the lamps because of the purchase quantities, make sure the retailers actually stock appropriate product that



1 meets Energy Star® requirements, take advantage of retailer marketing to reduce utility marketing  
2 costs, and hold on-site training and sales seminars at retail locations to help educate consumers and  
3 encourage them to use CFLs. These are advantages that can significantly reduce the  
4 administrative costs that would otherwise be required (i.e. marketing, collecting coupons and  
5 issuing rebates or credits, consumer outreach, etc.).

6 29. Staff has recommended that Mr. Magruder's alternative be rejected.

7 Summary of Recommendations

8 30. Based upon Staff's analysis of the benefits and costs of this Program, Staff has  
9 recommended that UNS Electric, Inc.'s proposed Compact Fluorescent Lamp Buy-down Program  
10 be approved with the following conditions:

- 11 a. If the Program is approved, it should be included in UNSE's semi-annual DSM reports  
12 filed with the Commission.  
13 b. Reporting for the Program should include, at a minimum, each of the items cited in  
14 Findings of Fact No. 16.

15 CONCLUSIONS OF LAW

16 1. UNSE is an Arizona public service corporation within the meaning of Article XV,  
17 Section 2 of the Arizona Constitution.

18 2. The Commission has jurisdiction over UNSE and over the subject matter of the  
19 application.

20 3. The Commission, having reviewed the application and Staff's Memorandum dated  
21 September 30, 2008, concludes that it is in the public interest to approve the UNSE Compact  
22 Fluorescent Lamp Buy-down Program as discussed herein.

23 ORDER

24 IT IS THEREFORE ORDERED that the UNS Electric, Inc. Compact Fluorescent Lamp  
25 Buy-down Program be and hereby is approved as discussed herein.

26 IT IS FURTHER ORDERED that UNS Electric, Inc.'s proposed Compact Fluorescent  
27 Lamp Buy-down Program:

28 ...

- 1 a. Be included in UNSE's semi-annual DSM reports filed with the Commission, and
- 2 b. Reporting for the Program include, at a minimum, each of the items cited in Findings
- 3 of Fact No. 16.

4 IT IS FURTHER ORDERED that UNS Electric, Inc. shall file in Docket Control, by

5 June 1, 2009, a report that studies and analyzes alternative means to implement a CFL program

6 that ensures that only its customers and ratepayers benefit from any of the rebates from such a

7 program.

8 IT IS FURTHER ORDERED that one of the alternatives analyzed in the above report shall

9 include a coupon program similar to the one proposed by Mr. Magruder in this case.

10 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

11

12 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

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14 CHAIRMAN

15

16 *William J. Murrell*

17 COMMISSIONER

18

19 *Jeffrey H. Hatch-Mulle*

20 COMMISSIONER

21

22 *R. M. M.*

23 COMMISSIONER

24

25 *Gayle J. Quinn*

26 COMMISSIONER

27

28 IN WITNESS WHEREOF, I, BRIAN C. McNEIL, Executive  
Director of the Arizona Corporation Commission, have  
hereunto, set my hand and caused the official seal of this  
Commission to be affixed at the Capitol, in the City of  
Phoenix, this 23<sup>rd</sup> day of October, 2008.

*Brian C. McNeil*

BRIAN C. McNEIL  
EXECUTIVE DIRECTOR

29

30 DISSENT: *Fred L. Heiser*

31

32 DISSENT: \_\_\_\_\_

33

34 EGJ:JJP:lhms\NS

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